SEQUENCE LISTING

<110> IGGO, RICHARD
      MALERBA, MADDALENA

<120> ANTI-NEOPLASTIC VIRUSES

<130> 604-691

<140> 10/647,111
<141> 2003-08-25

<160> 5

<170> PatentIn Ver. 3.2

<210> 1
<211> 5121
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Parvovirus H1
      with promoter P4 and left hairpin from MVM (phH1)

<400> 1
aaactccctg aaccgcttat cattttttaga actgaccaac catgttcacg taagtgacgt 60
gatgacgcgc gctgcgcgcg cgccttcgga cgtcacacgt cacttacgtt tcacatggtt 120
ggtcagttct aaaaatgata agcggttcag ggagtttaaa ccaaggcgcg aaaaggaagt 180
gggcgtggtt taaagtatat aagcaactac tgaagtcagt tacttatctt ttctttcatt 240
ctgtgagtcg agacgcacag aaagagagta accaactaac catggctgga aatgcttact 300
ctgatgaagt tttgggagca accaactggt taaaggaaaa aagtaaccag gaagtgttct 360
catttgtttt taaaaatgaa aatgttcaac tgaatggaaa agatatcgga tggaatagtt 420
acaaaaaaga gctgcaggag gacgagctga atctttaca acgaggagcg gaaactactt 480
gggaccaaag cgaggacatg gaatgggaaa ccacagtgga tgaaatgacc aaaaagcaag 540
tattcatttt tgattctttg gttaaaaaat gtttatttga agtgcttaac acaaagaata 600
tatttcctgg tgatgttaat tggtttgtgc aacatgaatg gggaaaagac caaggctggc 660
actgccatgt actaattgga ggaaaggact ttagtcaagc tcaagggaaa tggtggagaa 720
ggcaactaaa tgtttactgg agcagatggt tggtaacagc ctgtaatgtg caactaacac 780
cagctgaaag aattaaacta agagaaatag cagaagacaa tgagtgggtt actctactta 840
cttataagca taagcaaacc aaaaaagact ataccaagtg tgttcttttt ggaaacatga 900
ttgcttacta ttttttaact aaaaagaaaa taagcactag tccaccaaga gacggaggct 960
attttcttag cagtgactct ggctggaaaa ctaactttttt aaaagaaggc gagcgccatc 1020
tagtgagcaa actgtatact gatgagatga accagaaac ggtcgagacc acagtgacca 1080
ctgcacagga agctaagcgc ggcagaattc aaactagaga ggaggtctcg attaaaacca 1140
cactcaaaga gttggtacat aaaagagtaa cctcaccaga agactggatg atgatgcagc 1200
cagacagtta cattgaaatg atggctcaac caggtggaga aaacttgctt aaaaatacac 1260
tagagatctg tacactgact ctagcaagaa ccaaaacagc ctttgacttg attctggaaa 1320
aagctgaaac cagcaaacta gccaactttt ccatggctag caccagaacc tgtagaatct 1380
ttgctgagca tggctggaac tatattaaag tctgccatgc catctgttgt gtgctgaata 1440
gacaaggagg caaaaggaac actgtgctct ttcacggacc agccagcaca ggcaaatcta 1500
ttattgcaca agccatagca caagcagttg gtaatgttgg ttgttacaat gctgccaatg 1560
tgaactttcc atttaatgac tgtaccaaca aaaacttgat ttgggtggaa gaagctggta 1620
actttggcca gcaagtaaac caattcaaag ctatttgttc tggccaaacc atacgcattg 1680
atcaaaaagg aaaaggcagc aaacagattg aaccaacacc agttattatg accaccaacg 1740
agaacattac cgtggttaga ataggctgtg aggaaagacc agaacacact caaccaatca 1800
gagacagaat gctcaacatt cacctgacac gtacactacc tggtgacttt ggtttggtgg 1860
ataagcacga atggcctctg atctgtgctt ggttggtgaa gaatggttac caatctacca 1920

```
tggcttgtta ctgtgctaaa tggggcaaag ttcctgattg gtcagaggac tgggcggagc 1980
cgaagctaga cactcctata aattcgctag gttcaatgcg ctcaccatct ctgactccga 2040
gaagtacgcc tctcagccaa aactacgctc ttactccact tgcatcggac cttgcggacc 2100
tagctctaga gccttggagc acaccaaata ctcctgttgc gggcactgca gcaagccaaa 2160
acactgggga ggctggttcc acagcctgcc aaggtgctca acggagccca acctggtccg 2220
agatcgaggc ggatttgaga gcttgcttca gtcaagaaca gttggagagc gacttcaacg 2280
aggagctgac cttggactaa ggtacaatgg cacctccagc taaaagagct aaaagaggta 2340
aggggctaag ggatggttgg ttggtggggt actaatgtat gactacctgt tttacaggcc 2400
tgaaatcact tggttctagg ttgggtgcct cctggctaca agtacctggg accagggaac 2460
agccttgacc aaggagaacc aaccaaccct tctgacgccg ctgccaaaga acacgacgaa 2520
gcctacgacc aatacatcaa atctggaaaa aatccttacc tgtacttctc tcctgctgat 2580
caacgcttca ttgaccaaac caaagacgcc aaggactggg gcggcaaggt tggtcactac 2640
ttttttagaa ccaagcgagc ttttgcacct aagctttcta ctgactctga acctggcact 2700
tctggtgtga gcagacctgg taaacgaact aaaccacctg ctcacatttt tgtaaatcaa 2760
gccagagcta aaaaaaaacg cgcttctctt gctgcacagc agaggactct gacaatgagt 2820
gatggcaccg aaacaaacca accagacact ggaatcgcta atgctagagt tgagcgatca 2880
gctgacggag gtggaagctc tggggggtggg ggctctggcg ggggtgggat tggtgtttct 2940
actgggactt atgataatca aacgacttat aagttttttgg gagatggatg ggtagaaata 3000
actgcacatg cttctagact tttgcacttg ggaatgcctc cttcagaaaa ctactgccgc 3060
gtcaccgttc acaataatca aacaacagga cacggaacta aggtaaaggg aaacatggcc 3120
tatgacacac atcaacaaat ttggacacca tggagcttgg tagatgctaa tgcttgggga 3180
gtttggttcc aaccaagtga ctggcagttc attcaaaaca gcatggaatc gctgaatctt 3240
gactcattga gccaagaact atttaatgta gtagtcaaaa cagtcactga acaacaagga 3300
gctggccaag atgccattaa agtctataat aatgacttga cggcctgtat gatggttgct 3360
ctggatagta acaacatact gccttacaca cctgcagctc aaacatcaga aacacttggt 3420
ttctacccat ggaaaccaac cgcaccagct ccttacagat actacttttt catgcctaga 3480
caactcagtg taacctctag caactctgct gaaggaactc aaatcacaga caccattgga 3540
gagccacagg cactaaactc tcaatttttt actattgaga acaccttgcc tattactctc 3600
ctgcgcacag gtgatgagtt tacaactggc acctacatct ttaacactga cccacttaaa 3660
cttactcaca catggcaaac caacagacac ttggcatgcc tccaaggaat aactgaccta 3720
ccaacatcag atacagcaac agcatcacta actgcaaatg gagacagatt tggatcaaca 3780
caaacacaga atgtgaacta tgtcacagag gctttgcgca ccaggcctgc tcagattggc 3840
ttcatgcaac ctcatgacaa ctttgaagca aacagaggtg gcccatttaa ggttccagtg 3900
gtaccgctag acataacagc tggcgaggac catgatgcaa acggagccat acgatttaac 3960
tatggcaaac aacatggcga agattgggcc aaacaaggag cagcaccaga aaggtacaca 4020
tgggatgcaa ttgatagtgc agctgggagg gacacagcta gatgctttgt acaaagtgca 4080
ccaatatcta ttccaccaaa ccaaaaccag atcttgcagc gagaagacgc catagctggc 4140
agaactaaca tgcattatac taatgttttt aacagctatg gtccacttag tgcatttcct 4200
catccagatc ccatttatcc aaatggacaa atttgggaca aagaattgga cctggaacac 4260
aaacctagac tacacgtaac tgcaccattt gtttgtaaaa acaacccacc aggtcaacta 4320
tttgttcact ggggcctaaa tctgactgac caatttgacc caaacagcac aactgtttct 4380
cgcattgtta catatagcac tttttactgg aagggtattt gaaattcaaa gccaaacta 4440
agaccaaatc tgacctggaa tcctgtatac caagcaacca cagactctgt tgccaattct 4500
tacatgaatg ttaagaaatg gctcccatct gcaactggca acatgcactc tgatccattg 4560
atttgtagac ctgtgcctca catgacatac taaccaacca actatgtttc tctgtttgct 4620
tcacataata cttaaactaa ctagactaca acataaaaat atacacttaa taatagatta 4680
ttaaaaataa cataatatgg taggttaact gtaaaaaata atagaacttt tggaataaat 4740
atagttagtt ggttaatgtt agatagaata taaaaagatt ttgtatttta aaataaatat 4800
agttagttgg ttaatgttag atagaatata aaaagatttt gtatttggga aataaaaagg 4860
gtggttgggt ggttggttgg tactcccttaa gactgaatgt tagggaccaa aaaaataata 4920
aaataattaa aatgaacaag gactactgtc tattcagttg accaactgaa cctatagtat 4980
cactatgttt ttagggtggg ggggtgggag atacatacgt tcgctatgga ccaagtggta 5040
ccggttggtt gcgctcaacc aaccggaccg gcttagccgg tccggttggt tcgagcttag 5100
caaccaaccg gtaccacttg g                                        5121
```

```
<210> 2
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 2
gatctccttt gatcttaatc cctttgatct ggatcccttt gatctccaac cctttgatc   59


<210> 3
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 3
ccacactcaa agagttggta cataa                                        25


<210> 4
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 4
cacctggttg agccatcat                                               19


<210> 5
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      probe

<400> 5
aactgtctgg ctgcatcatc atcca                                        25
```